

CHANGE ISSUE

ASA MASPS REV -

| Tracking Information (committee secretary only) | |
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| Change Issue Number | 9 |
| Submission Date | 4/23/03 |
| Status (open/closed/deferred) | OPEN |
| Last Action Date | 4/23/03 |

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| Short Title for Change Issue: | Display of position uncertainty, R_{NAC} |
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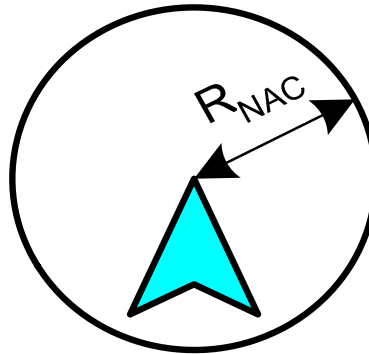
| MASPS Document Reference: | | Originator Information: | |
|---------------------------|---|-------------------------|--------------------------|
| Entire document (y/n) | N | Name | James Maynard |
| Section number(s) | | Phone | +1 (503) 391-3281 |
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| Table/Figure number(s) | | Other | Jhm1jhm@attglobal.net |

| Proposed Rationale for Consideration (originator should check all that apply): | |
|--|--|
| X | Item needed to support of near-term MASPS/MOPS development |
| | DO-260/ED-102 1090 MHz Link MOPS Rev A |
| | ADS-B MASPS |
| | TIS-B MASPS |
| | UAT MOPS |
| X | ASSAP/CDTI MOPS |
| X | Item needed to support applications that have well defined concept of operation |
| | Has complete application description |
| | Has initial validation via operational test/evaluation |
| | Has supporting analysis, if candidate stressing application |
| | Item needed for harmonization with international requirements |
| X | Item identified during recent ADS-B development activities and operational evaluations |
| | MASPS clarifications and correction item |
| | Validation/modification of questioned MASPS requirement item |
| | Military use provision item |
| X | New requirement item (must be associated with traffic surveillance to support ASAS) |

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| Nature of Issue: | | Editorial | | Clarity | | Performance | X | Functional |
| <u>Issue Description:</u> It has been proposed to <i>require</i> that all traffic targets for which the NAC_P code is too small (e.g., $NAC_P < 5$, EPU or HFOM ≥ 1 NM) <i>must</i> be removed from the CDTI display. I would like to relax this proposed requirement, so as to permit an alternative, as described below. | | | | | | | | |

Originator's proposed resolution:

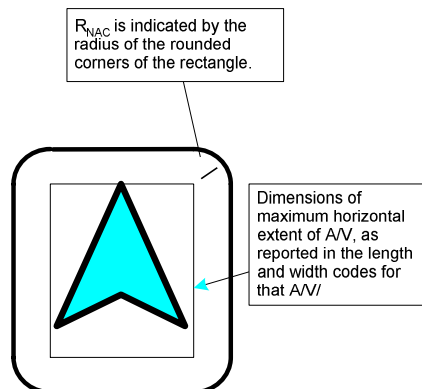
For traffic targets with non-zero NAC_P codes, permit the CDTI display to show the target's position uncertainty. One way to do this might be to draw a circle with radius R_{NAC} around the target, where R_{NAC} is the least upper bound on the EPU value for the NAC_P being reported by that target. Figure 1 shows how this might be done.



If R_{NAC} , the maximum EPU (Estimated Position Uncertainty) for a traffic target's the NAC code, is large compared to the symbol for that target on the CDTI display, the uncertainty in target position might be represented by a circle with center at the reported position of that target.

Figure 1: Indicating Position Uncertainty on a CDTI Display.

For an aircraft (or vehicle) on the surface, which reports length and width codes to indicate the dimensions of a rectangle that encloses that target, we should permit the CDTI display to indicate the horizontal extent of the aircraft. One way this might be done is shown in Figure 2 below.



For an aircraft on the surface, that reports its length and width codes as well as NAC_P , a rectangle with rounded corners might be drawn to show the region which the aircraft is believed to occupy.

Originator's proposed resolution (continued):

The CDTI should only be required to remove a target from the display (a) if $NACP = 0$, for which RNAC is infinite, or (b) if the circle(or rounded rectangle) with radius RNAC does not fit on the display, or (c) if RNAC is excessive and the CDTI designer did not exercise the option of showing the target's RNAC value.

Working Group 4 Deliberations:

April 22, 2003: This Issue Paper was reviewed and discussed y WG4 at the WG4 meetings held April 22 & 23, 2003 at RTCA, Inc. There was much discussion about balancing the danger of not displaying a target vs. the confusion of cluttering the display with too much information and/or “confusing” symbology. It was agreed that much of what was currently in §3.3.3 of the draft ASA MASPS and the specifics of this Issue Paper were MOPS level topics. Since no CDTI MOPS has been written, it was agreed that MOPS level material will be placed in an appendix of the ASA MASPS.